

### **REMARKS**

This Amendment responds to the Office Action mailed December 18, 2003 in the above-identified application. Based on the foregoing amendments and the following comments, reconsideration and allowance of the application are respectfully requested.

Claims 1-26 are pending in the application. Claims 1, 7, 13, 14, 19 and 25 have been amended. The amendments find clear support in the application as filed, at least at page 4, lines 9-14 of the specification. No new matter has been added. Claims 1, 7, 13, 19 and 25 are independent claims.

The Examiner has rejected claims 1-26 under 35 U.S.C. § 103(a) as unpatentable over Chow et al. (US 6,408,033) in view of Zimmerman (article entitled "Achievable rates vs. Operating Characteristics of Local Loop Transmission: HDSL, HDSL2, ADSL, and VDSL"). The rejection is respectfully traversed.

Chow discloses techniques for supporting multiple bit allocations in a multicarrier modulation system. Chow describes a transmission scheme where ADSL and ISDN transmission schemes are utilized. As shown in Figs. 13A and 13B superframe structures 1300 and 1302 for ISDN and ADSL, respectively, are synchronized. (Column 19, lines 9-15). Chow discloses bit allocations for the ADSL superframe in Figs. 13C and 13D. (Column 19, lines 55-57). Chow asserts that multiple bit allocations for each transmission direction permit cross-talk interference to be reduced. (Column 20, lines 14-19).

Zimmerman in Fig. 2 shows transmit spectra for different transmission techniques.

Applicants amended claim 1 is directed to a method for reducing cyclo-stationary cross-talk noise from a narrow band time division duplex system into a wideband transmission system in a copper wire pair network, wherein the time division duplex system operates in a lower part of a spectrum. The method comprises operating the wideband transmission system with frequency division duplex, dividing the wideband transmission system into more than two frequency bands, such that a lower band is at least partly overlapping the time division duplex system, and the lower band and a higher band are transmitting in opposite directions, and switching the transmission directions in the lower and the higher frequency bands so that the lower band of the wideband transmission system always transmits in the same direction as the

time division duplex system. The transmission direction in at least one frequency band in the upper part of the spectrum of the wideband transmission system is not switched.

Chow contains no disclosure or suggestion of a method for reducing cross-talk noise from a narrow band time division duplex system into a wideband transmission system, wherein the *transmission direction in at least one frequency band in the upper part of the spectrum of the wideband transmission system is not switched*, as required by amended claim 1. In fact, Chow contains no discussion of frequency bands, except to the extent that TDD and FDD transmission schemes are mixed, resulting in cross-talk interference. (Column 18, line 64 to column 19, line 8). One skilled in the art reviewing Chow would obtain no teaching regarding transmission direction in the frequency band in the upper part of the spectrum, as claimed.

Zimmerman does not provide teachings that are lacking in Chow. In particular, Zimmerman does not discuss switching transmission directions to reduce cross-talk.

Accordingly, amended claim 1 is clearly and patentably distinguished over Chow in view of Zimmerman, and withdrawal of the rejection is respectfully requested.

Claims 2-6 depend from claim 1 and are patentable over Chow in view of Zimmerman for at least the reasons discussed above in connection with claim 1.

Amended claim 7 is directed to an arrangement for reducing cyclo-stationary cross-talk noise from a narrow band time division duplex system into a wideband transmission system in a copper wire pair network and contains apparatus limitations that parallel the method limitations of claim 1. Amended claim 7 is clearly patentable over Chow in view of Zimmerman for at least the reasons discussed above in connection with amended claim 1.

Claims 8-12 depend from claim 7 and are patentable over Chow in view of Zimmerman for at least the reasons discussed above in connection with claims 1 and 7.

Amended claim 13 is directed to a method, in a frequency division duplex transmission system, for reducing cross-talk from a time division duplex system and requires, in part, not switching a transmission direction of at least one upper frequency band. As discussed above in connection with claim 1, Chow and Zimmerman, taken individually or in combination, contain no disclosure or suggestion regarding transmission directions in upper frequency bands of a frequency division duplex transmission system. Accordingly, amended claim 13 is clearly and patentably distinguished over Chow in view of Zimmerman.

Claims 14-18 depend from claim 13 and are patentable over Chow in view of Zimmerman for at least the reasons discussed above in connection with claims 1, 7 and 13.

Amended claim 19 is directed to a frequency division duplex transmission system including apparatus for reducing cross-talk from a time division duplex system, wherein the transmission direction of at least one upper frequency band is not switched. As discussed above, Chow and Zimmerman, taken individually or in combination, do not disclose a transmission system wherein a transmission direction of an upper frequency band is not switched. For these reasons and for the reasons discussed above in connection with claims 1, 7 and 13, amended claim 19 is clearly and patentably distinguished over Chow in view of Zimmerman.

Claims 20-24 depend from claim 19 and are patentable over Chow in view of Zimmerman for at least the reasons discussed above in connection with claims 1, 7, 13 and 19.

Amended claim 25 is directed to a method for reducing cross-talk in a frequency division duplex system and requires, in part, not switching transmission directions of upper frequency bands. Chow and Zimmerman, taken individually or in combination, do not disclose or suggest not switching transmission directions of upper frequency bands, as required by amended claim 25. For these reasons and for the reasons discussed above in connection with claims 1, 7, 13 and 19, amended claim 25 is clearly patentable over Chow in view of Zimmerman.

Claim 26 depends from claim 25 and is patentable over Chow in view of Zimmerman for at least the reasons discussed above in connection with claim 25.

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### CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,  
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